REMARKS

Claims 15, 20, 21, 22 and 23 have been amended to clarify the invention. No new matter has been entered.

The art rejection is respectfully traversed. In rejecting the claims as obvious from Ando et al., the Examiner states:

> "Ando teaches an amorphous oxide film composed essentially of an oxide of Hf (amorphous hafnium oxide) and one oxide of Si (silicon oxide). The amorphous oxide film is in a multilayer structure of at least three layers comprised of the amorphous oxide types, thereby producing a stack, alternative layers, and where the outer layer comprises silicon oxide. See abstract, page 10, lines 1-30, and Figures 2-8."

It is respectfully submitted the Examiner's reliance on Ando et al. is misplaced. Ando does not teach layers of a first oxide, a second one and so on. In Ando, each layer comprising amorphous hafnium oxide also comprises in the very same layer "at least one member selected from the group consisting of B and Si" (end of Abstract of Ando).

Ando et al. does not teach a stack of layers with hafnium oxide forming one layer and another material forming another one.

For instance in the description of figure 2 at the bottom of page 9, Ando et al. states:

> "Figure 2 is a cross-sectional view of an embodiment of the article with high durability according to the present invention, wherein reference numeral 1 indicates a substrate made of e.g. a transparent or colored glass or plastic, numeral 2 indicates a first layer made of a metal, nitride, carbide, boride, oxide, silicide or a mixture thereof, and numeral 3 indicates a second layer of an amorphous oxide film constituting the outermost layer exposed to air, i.e. an amorphous oxide film composed essentially of an oxide containing at least one member selected from the group consisting of Zr, Ti, Hf, Ta, Sn and In and at least one member selected from the group consisting of B and Si." (underlining added for emphasis).

Thus, it is clear that in Ando et al. the one single layer 3 is made of a mixed of hafnium oxide and an oxide of B or Si.

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See also page 10, lines 14-21 of Ando et al. in which it is stated:

> "There is no particular restriction as to the amorphous oxide film for the second layer 3 in Figure 1 (sic)* or for the third layer 13 in Figure 2, so long as it is amorphous as measured by the thin film X-ray diffraction analysis. Specifically, a mixed oxide film containing at least one member selected from the group consisting of Zr, Ti, Hf, Sn, Ta and In and at least one member selected from the group consisting of B and Si, is preferred in view of the scratch resistance and the abrasion resistance. Particularly preferred are a film of a ZrB_xO_y wherein x is $0.05 \leq X \leq 1.0$, and y is $2 \leq y \leq 3.5$, a film of $ZrSi_zO_y$ wherein z is $0.05 \leq z < 19$, and y is $2.1 \leq y < 40$, and a film of $ZrB_xSi_zO_y$ wherein x, z and y are $0.05 \leq x + z\ z < 19$ and $2 < y < 40$, provided that when $x > 3$, $x \leq 0.25\ z + 3$." (underlining added for emphasis).
>
> *Figure 1 is a series of graphs. The reference should be to Figure 2.

Once more it is clear that layer 13 is a mixed of oxides.

The same is applicable to Figure 4 (see page 12, lines 31-39), and Figure 5 (see page 14, lines 16-18).

For Figure 6, a list of oxides alone are cited for an intermediary layer 42 (page 14, line 48). However the list does not include HFO_2.

For the protective layer 44, which is one invented by Ando et al., the same as above applies (see page 15, lines 20-24).

The same also applies for Figure 7 (page 16, lines 43).

In addition, from Table 1, the composition of the target from which the deposit is made, it appears that the target is a mix of Zr, B and oxide thereof. The deposit provided by such a target is also a mix.

Thus, it is clear there is nothing contained within the four corners of Ando et al. that teaches or suggests a thin layer material consisting essentially of amorphous hafnium oxide having a density less than 8 gm/cm^3 as required by claim 1; or a stack of thin layers including at least one layer consisting essentially of amorphous hafnium oxide having a density less than

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8 gm/cm^3 as required by claim 15 or an optical component having on at least one surface at least one layer consisting essentially of amorphous hafnium oxide having a density of less than 8 gm/cm^3 as required by independent claim 20. Accordingly, none of independent claims 14, 15 or 20, or the several claims dependent directly or indirectly thereon can be said to be anticipated by or obvious from Ando et al. It is therefore respectfully submitted the Examiner is applying impermissible hindsight and is applying the teachings of the present invention to Ando et al. to make out a case for obviousness.

Quite apart from the foregoing, it is submitted the Examiner has been rather inconsistent in application of Ando et al. Earlier in the prosecution, the Examiner finally rejected the claims as being obvious from the U.S. equivalent to Ando et al. taken with two other references. (See the Office Action of February 26, 2003). In response thereto, Applicants filed and briefed an Appeal. Rather than answer the Appeal, the Examiner withdrew the finality of the February 26, 2003 Action, conducted a further search and issued a new Action citing new art. (See the Office Action of March 22, 2004). When Applicants overcame that new art, the Examiner has now gone back to Ando et al., this time citing the EP equivalent to the previously cited U.S. Patent to Ando et al., and the Examiner now takes the position that the claims are obvious from Ando et al. take alone. Yet, the claims are essentially unchanged, and the teachings of Ando EP '475 are believed to be the same as the teachings of Ando '435 U.S. Simply put, if the Examiner acknowledged in the February 26, 2003 Office Action, the teachings were not found in Ando et al. take alone, how can the Examiner now take the position that the teachings are found in Ando et al.?

Having dealt with all the objections raised by the Examiner, the Application is believed to be in order for allowance. Early and favorable action are respectfully requested.

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Respectfully submitted,

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